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Heart Failure

PERCUTANEOUS AXILLARY INTRA-AORTIC BALLOON PUMP FOR EXTENDED SUPPORT IN PATIENTS WITH END-STAGE HEART FAILURE IMPROVES END-ORGAN FUNCTION

Poster Contributions
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Background: The efficacy of short term Intra-aortic Balloon Pump (IABP) use has been recently put into question; however its use for extended support isn't well established. We previously demonstrated the safety and feasibility of the use of percutaneous Axillary IABP as bridge to orthotopic heart transplant (OHT) in HF patients. Our primary aim is to review the impact of extended IABP use in end-organ function and hemodynamics.

Methods: We retrospectively identified patients that underwent left axillary IABP implantation as a bridge to transplant strategy. Laboratory values and invasive hemodynamics were retrieved from the day before IABP implantation and from the day of OHT or removal. Paired student t-test was used and p values <0.05 considered significant.

Results: A total of 44 patients were analyzed, 39 (89%) were successfully bridged to either heart or heart multi organ transplant. Three patients expired while on support and two underwent high risk LVAD implantation. Median days of support 17 with a range of 6-152 days. Overall there was a significant improvement in creatinine, BUN and total bilirubin and as well as a significant decrease in mean pulmonary artery pressure with slightly lower right atrial pressure.

Conclusions: Extended support with a percutaneous axillary IABP for patients with end-stage HF as a bridge to OHT was associated with improvement in end-organ function and pulmonary pressure. These findings support the prolonged use of axillary IABP in a select advanced HF population.

Table. Comparison of pertinent laboratory and hemodynamic values before and after extended support (median days of support: 17)

Laboratory variables	At insertion	after extended support	p value
Creatinine (mg/dl)	1.7 ± 0.9	1.5 ± 0.7	0.02
BUN (mg/dl)	38.8 ± 24	31.7 ± 17.7	0.03
Total Bilirubin (mg/dl)	1.1 ± 0.5	0.9 ± 0.5	0.02
AST (U/L)	63.1 ± 114.8	47.9 ± 52	0.2
ALT (u/L)	47.2 ± 77.1	34.3 ± 18.2	0.2
WBC (k/ul)	8.1 ± 3.2	8.1 ± 2.8	0.6
Hemoglobin (g/dl)	11.6 ± 2.2	10.6 ± 2.0	0.004
Platelets (k/ul)	193 ± 76	168 ± 55.6	0.02
INR	1.4 ± 0.6	1.3 ± 0.5	0.6
On inotropes	59%	3%	
On diuretics	80%	90%	
Invasive hemodynamics			
RAP (mmHg)	13 ± 6	11 ± 6	0.3
mPAP (mmHg)	34 ± 11	27 ± 9	0.006

BUN: Blood Urea Nitrogen, AST: Aspartate Aminotransferase, ALT: Alanine Aminotransferase, WBC: White Blood Cell, INR: International Normalized Ratio, RAP: Right Atrial Pressure, mPAP: Mean Pulmonary Artery Pressure